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Hitoshi Nohno

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EXAMINER

KIM, HEE-YONG

ART UNIT

PAPER NUMBER

2482

NOTIFICATION DATE

DELIVERY MODE

05/17/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/598,090	Applicant(s) NOHNO ET AL.	
	Examiner HEE-YONG KIM	Art Unit 2482	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-26,28-37,39-45 and 48-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-45 and 48-52 is/are allowed.
- 6) ☒ Claim(s) 21-26,28-37,39-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in reply to Applicant's Response dated April 4, 2011.
2. **Claims 21-22, 35-37, 39-41 and 48** have been amended.
3. **Claims 38, 46 and 47** has been cancelled.
4. **Claims 21-26, 28-37, 39-45 and 48-52** are pending.

Response to Arguments

5. Applicant's arguments (pp.12-14) with respect to the prior art rejection over **claims 21-26, 28-37 and 39-40** have been considered but are moot in view of the new ground(s) of rejection.
6. Regarding **claims 41-45 and 48-52**, Applicant's arguments (pp.11) are persuasive, and claims 41-45 and 48-52 are allowable. Applicant amended claim 41 to include all of features of **allowable** claim 47 (indicated in the previous office action) and intervening claim 46. Applicant also amended claim 48, which was **allowable** dependent claim indicated by the previous office action, to be in dependent form including all of features of previously presented claim 41 and cancelled claim 46 and 47. The remaining claims 42-45, and 49-52 are dependent on either of allowable claims 41 or 48. Therefore, claims 41-45 and 48-52 are allowable.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claim 37** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 37 is directed to a computer readable medium and it recites "A tangible computer recording medium containing an image display program". However, "tangible computer recording medium" is neither defined in the specification nor in the original claims, and therefore it can contain transitory signals. Thus, such a medium cannot be a patentable subject matter. "A non-transitory computer-readable storage medium" is recommended as an appropriate computer readable medium.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 21-24, 28-29, 31-35, and 37 and 39-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Makoto (JP 2003-16595) in view of Tooyama (US 2004/0,223,219), hereafter referenced as Makoto and Tooyama respectively.

Notice that the English machine translation of Makoto, which is one of prior arts in the applicant's IDS, is used for the office action and it is included in this office action. For the figure, please refer to the original.

Regarding **claim 21**, Makoto discloses Driving Support Device. Makoto Specifically discloses An onboard display device (Fig.3 and Fig.4) for displaying an image outside of a vehicle inputted from an image capture section (cameras, 15a (back camera), 15b (left camera), 15c (right camera) Fig.1) on a display screen, the onboard display device comprising:

a display control section arranged to receive an image display instruction (Display left or right outside area image depending on turning left or right, S15 and S16 and S19, Fig.2, paragraph 19) for checking a rightward or a leftward (Fig.2:S15, Check whether turning left or right) outside area of the vehicle, and to cause the display screen to display a rightward outside area image (Fig.2:S19, If right turn, display right) or a leftward outside area image (Fig.2:S16, If left turn, display left) of the vehicle, the rightward outside area image or the leftward outside area image being captured by the image capture section; and

an image processing section arranged to cause a manner in which the rightward outside area image is displayed to be different (left hand side is displayed on the left, and right hand side is displayed on the right into split screen, paragraph 9) from a manner in which the leftward outside area image is displayed.

However, Makoto fails to disclose wherein the image processing section is arranged to display the rightward outside area image and the leftward outside area image in different frames on the display screen, the different frames having different shapes from each other.

In the analogous field of endeavor, Tooyama discloses Method of Fabricating Printed Material for Stereoscopic Viewing, and Printed Material for Stereoscopic Viewing. Tooyama specifically discloses displaying left and right images in different frames on the display screen, the different frames having different shapes from each other, for the stereoscopic view (par. 176), in order to differentiate left and right images. Even though Tooyama's application (stereoscopic) is different from the invention, it would have been obvious to apply the Tooyama method to Makoto analogically, in order to differentiate leftward and rightward views from each other.

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Makoto by specifically providing arranging image processing section to display the rightward outside area image and the leftward outside area image in different frames on the display screen, in order to differentiate left and right images. The Makoto driving support, incorporating the Tooyama arranging image processing section to display the rightward outside area image and the leftward outside area image in different frames on the display screen, has all the features of claim 21.

Regarding **claim 22**, the claimed invention is same as claim 21 except minor difference. It has a limitation of "directly displaying image on the screen" while claim 21 has a limitation of cause to display. However, Makoto discloses this feature as shown in the above claim 21.

Regarding **claim 23**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). In addition, Makoto discloses wherein the image

processing section is arranged to cause a position on the display screen of the rightward outside area image to be different (left hand side is displayed on the left, and right hand side is displayed on the right into split screen, paragraph 9) from a position on the display screen at which the leftward outside area image is displayed.

Regarding **claim 24**, Makoto and Tooyama disclose everything claimed as applied above (see claim 23). In addition, Makoto discloses wherein the image processing section is arranged to display the rightward outside area image rightward with respect to a reference position on the display screen, and to display the leftward outside area image leftward (left hand side is displayed on the left, and right hand side is displayed on the right into split screen, paragraph 9) with respect to the reference position (center of the screen) on the display screen.

Regarding **claim 28**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). In addition, Makoto discloses wherein the image processing section mirror-reverses an image (reversed method photography picture of left-hand side, paragraph 19) produced by the image capture section and causes the rightward outside area image and the leftward outside area image to be displayed in a mirror-reversed form on the display screen.

Regarding **claim 29**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). In addition, Makoto discloses wherein the display control section is arranged to receive an image display instruction from a direction indicating device of the vehicle (Direction Indicator Switch 12, Fig.1), the direction indicating

device indicating that the vehicle is going to make a right turn or a left turn (Fig.2:S15, Check whether turning left or right).

Regarding **claim 31**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). In addition, Makoto discloses wherein the display control section is arranged to receive an image display instruction (signal from GPS 21 to Controller 20, Fig.1) from a navigation information transmitting and receiving section (GPS 21, Fig.1) of the vehicle, the navigation information transmitting and receiving section obtaining information on a position of the vehicle (inherent in GPS), the information being sent from a navigation information transmitting station.

Regarding **claim 32**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). In addition, Makoto discloses further comprising: an input section arranged to adjust and control the manner (left hand side is displayed on the left, and right hand side is displayed on the right into split screen, paragraph 9) in which an image is displayed on the display screen.

Regarding **claim 33**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). In addition, Makoto discloses A vehicle (vehicle, paragraph 11), comprising the onboard display device according to Claim 21.

Regarding **claim 34**, Makoto and Tooyama disclose everything claimed as applied above (see claim 33). In addition, Makoto discloses further comprising: a switch (Direction Indicator Switch 12, Fig.1) arranged to output to the onboard display device an image display instruction to display the rightward outside area image or the leftward outside area image.

Regarding **claim 35**, Makoto discloses An onboard display device (Fig.3 and Fig.4) for displaying an image outside of a vehicle inputted from an image capture section (cameras, 15a (back camera), 15b (left camera), 15c (right camera), Fig.1) on a display screen, the onboard display device comprising:

a display control section arranged to receive an image display instruction signal (Fig.2: S12, Check whether it reached the turning point (winding part), paragraph 14-15) for checking a rear area (Fig.2: S13: display rear area if not reached turning point) of the vehicle, and cause the display screen to display either a rightward outside area image of a rightward outside area of the vehicle (Fig.2:S19, If right turn, display right) or a leftward outside area image of a leftward outside area of the vehicle based on a type of the instruction signal (Fig.2:S15, Check whether turning left or right), the image display instruction signal (Direction Indicator Switch 12, Fig.1) being output from the vehicle, and the rightward outside area image and the leftward outside area image being captured by the image capture section (cameras, 15a (back camera), 15b (left camera), 15c (right camera), Fig.1); and

an image processing section arranged to display the rightward outside area image to be displayed in a manner different (left hand side is displayed on the left, and right hand side is displayed on the right into split screen, paragraph 9) from a manner in which the leftward outside area image is displayed.

However, Makoto fails to disclose wherein the image processing section is arranged to display the rightward outside area image and the leftward outside area image in

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different frames on the display screen, the different frames having different shapes from each other.

Tooyama specifically discloses displaying left and right images in different frames on the display screen, the different frames having different shapes from each other, for the stereoscopic view (par. 176), in order to differentiate left and right images. Even though Tooyama's application (stereoscopic) is different from the invention, it would have been obvious to apply the Tooyama method to Makoto, in order to differentiate leftward and rightward views from each other.

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Makoto by specifically providing arranging image processing section to display the rightward outside area image and the leftward outside area image in different frames on the display screen, in order to differentiate left and right images. The Makoto driving support, incorporating the Tooyama arranging image processing section to display the rightward outside area image and the leftward outside area image in different frames on the display screen, has all the features of claim 35.

Regarding **claim 37**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). In addition, Makoto discloses wherein the image display program causing a computer (microcomputer 10, Fig.1) to function as the display control section and the image processing section.

Regarding **claim 39**, the claimed invention is a method claim corresponding to the device claim 21. Therefore, it is rejected for the same reason as claim 21.

Regarding **claim 40**, Makoto specifically discloses A display method (Fig.3 and Fig.4) of an onboard display device, mounted on a vehicle provided with one or more image capture devices (cameras, 15a (back camera), 15b (left camera), 15c (right camera) Fig.1) capable of capturing images of rightward and leftward rear areas of the vehicle (Fig.3), and which can display the images for checking the rightward and leftward rear areas (Fig.2:S15, Check whether turning left or right) on a display screen, the display method comprising the steps of:

detecting an instruction for displaying a rightward outside area image for checking a rightward outside area of the vehicle or a leftward outside area image for checking a leftward outside area of the vehicle (Display left or right outside area image depending on turning left or right, S15 and S16 and S19, Fig.2, paragraph 19);

selecting and displaying either the rightward outside area image for checking the rightward outside area of the vehicle or the leftward outside area image for checking the leftward outside area of the vehicle according to a detection result in the detecting step (Display left or right outside area image depending on turning left or right, S15 and S16 and S19, Fig.2, paragraph 19).

However, Makoto fails to disclose displaying the rightward outside area image and the leftward outside area image in different frames on the display screen, the different frames having different shapes from each other.

Tooyama specifically discloses displaying left and right images in different frames on the display screen, the different frames having different shapes from each other, for the stereoscopic view (par. 176), in order to differentiate left and right images. Even

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though Tooyama's application (stereoscopic) is different from the invention, it would have been obvious to apply the Tooyama method to Makoto, in order to differentiate leftward and rightward views from each other.

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Makoto by specifically providing displaying the rightward outside area image and the leftward outside area image in different frames on the display screen, in order to differentiate left and right images. The Makoto driving support, incorporating the Tooyama displaying the rightward outside area image and the leftward outside area image in different frames on the display screen, has all the features of claim 40.

11. **Claims 25-26 and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Makoto in view of Tooyama, further in view of Nojima (US 5,764,139) (hereafter referenced as Nojima).

Regarding **claim 25**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). However Makoto and Tooyama fail to disclose wherein the image processing section is arranged to display a speedometer at substantially the same position on the display screen when the rightward outside area image is displayed and when the leftward outside area image is displayed.

In the analogous field of endeavor, Nojima discloses Information Display Apparatus for Vehicles. Specifically Nojima discloses displaying speedometer

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(Fig.10A,10B,10C) in the display with other information, in order to provide the important vehicle running condition to the driver (col.1, line 46-49).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Makoto and Tooyama by specifically providing the speedometer alongside with either left or right side area image, in order to provide the important vehicle running condition to the driver. The Makoto driving support, incorporating the Tooyama displaying the rightward outside area image and the leftward outside area image in different frames on the display screen, further incorporating the Nojima displaying speedometer alongside with either left or right side area image, has all the features of claim 25.

Regarding **claim 26**, the Makoto driving support, incorporating the Tooyama displaying the rightward outside area image and the leftward outside area image in different frames on the display screen, further incorporating the Nojima displaying speedometer alongside with either left or right side area image, as applied to claim 25, discloses wherein the image processing section is arranged to fix the display a speedometer (Nojima: Fig.10A,10B,10C) of the vehicle in front of a driver of the vehicle.

Regarding **claim 36**, the claimed invention is further limiting of claim 35. The additional feature is display layout including an image indicating information on the vehicle. However, Makoto and Tooyama fail to disclose display layout including an image indicating information on the vehicle.

Specifically Nojima discloses displaying speedometer (Fig.10A,10B,10C) in the display with other information, in order to provide the important vehicle running condition to the driver (col.1, line 46-49).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Makoto and Tooyama by specifically providing the speedometer alongside with either left or right side area image. The Makoto driving support, incorporating the Tooyama displaying the rightward outside area image and the leftward outside area image in different frames on the display screen, further incorporating the Nojima displaying speedometer alongside with either left or right side area image, has all the features of claim 36.

12. **Claim 30** is rejected under 35 U.S.C. 103(a) as being unpatentable over Makoto in view of Tooyama, further in view of Shimizu (US 7,366,595) (hereafter referenced as Shimizu).

Regarding **claim 30**, Makoto and Tooyama disclose everything claimed as applied above (see claim 21). However Makoto and Tooyama fail to disclose wherein the display control section is arranged to receive an image display instruction from a sensor of the vehicle which detects whether an outside object is present or absent around the vehicle.

In the same field of endeavor, Shimizu discloses Vehicle Drive Assist System. Specifically Shimizu) discloses wherein the display control section is arranged to receive an image display instruction (Fig.7) from a sensor (corner sensor 18, Fig.7) of

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the vehicle which detects (obstacle detection, col.29, line 19-27) whether an outside object is present or absent around the vehicle, in order to urge the driver to turn his attention to the obstructive object (col.29, line 26-27).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Makoto and Tooyama by specifically providing the obstacle detection system, in order to urge the driver to turn his attention to the obstructive object. The Makoto driving support, incorporating the Tooyama displaying the rightward outside area image and the leftward outside area image in different frames on the display screen, further incorporating the Shimuzu obstacle detection system, has all the features of claim 30.

Allowable Subject Matter

13. **Claims 41-45 and 48-52** are allowable.

14. **Claim 41** recites "...the leftward rear view image or the rightward rear view image has a trapezoidal shape whose shorter side is located, on a side closer to the vehicle..." which are features that are not anticipated nor obvious over the art of record.

Claim 48 recites "...wherein the image processing section is arranged to display, from left to right, the navigation, image, a tachometer, the speedometer, a gear status, a thermometer, and a fuel gauge as the information concerning the vehicle condition in the normal running mode, in response to receipt of the image display instruction for checking the rightward rear view, the image processing section is arranged to display

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the rightward rear view image on a right side of the display screen and to display the thermometer and the fuel gauge in replacement of the tachometer, and in response to receipt of the image display instruction for checking the leftward rear view, the image processing section is arranged to display the leftward rear view image on a left side of the display screen in replacement of the navigation image..." which are features that are not anticipated nor obvious over the art of record. The remaining claims 42-45 and 49-52 are dependent on either of allowable claims 41 or 48. Therefore, claims 41-45 and 48-52 are allowable. Accordingly, if rejected claims 21-26, 28-37 and 39-40 are cancelled, the application would be placed in a condition for allowance.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-3669. The examiner can normally be reached on Monday-Thursday, 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEE-YONG KIM/
Examiner, Art Unit 2482